

Claims

Claims 1-9 and 18-20 are provisionally withdrawn. Claims 10-17 are elected and 12 new claims also drawn to the method are added.

Claims 1-9 [provisionally withdrawn]

Claims 10-17 [elected]:

10. [elected] A method for separating compounds comprising the step of:

contacting a solution comprising compounds including a non-shielded purine or pyrimidine moiety and compounds including a shielded purine or pyrimidine moiety with a solid composition including immobilized metal atoms and/or ions capable of binding compounds containing a non-shielded purine or pyrimidine moiety to form a supernatant liquid having a reduced amount of compounds including a non-shielded purine or pyrimidine moiety.

11. [elected] The method of claim 10, further comprising the step of:

separating the supernatant liquid from the solid composition.

12. [elected] A method for separating compounds comprising the steps of:

passing a solution comprising a mixture of compounds including a non-shielded purine moiety, a non-shielded pyrimidine moiety or mixture thereof through a column including an IMAC ligand, where the ligand is capable of differentially binding the compounds; and

collecting purified samples of each compound.

1 13. [elected] The method of claim 12, further comprising the step of:

2 detecting each compound in an effluent from the column as a function of time
3 from at least one detectable property associated with each compound; and
4 determining the identity of each compound from the detected properties.

1 14. [elected] A method for purifying food stuffs containing purine and/or pyrimidine
2 moieties comprising the steps of:

3 forming a crude food stuff comprising cellular constituents including digestable
4 proteins and nucleic acid contaminants including a non-shielded purine moiety, a non-
5 shielded pyrimidine moiety or mixture thereof;

6 contacting the food stuff with substrate comprising an IMAC ligand, where the
7 substrate binds the nucleic acid contaminants; and

8 removing the substrate comprising the IMAC ligand having bound thereto the
9 nucleic acid contaminants to form a purified food stuff.

1 15. [elected] The method of claim 14, further comprising the step of

2 treating the crude food stuff with a DNase, endo or exo nuclease or other nucleic
3 acid digestion enzyme or agent prior to the contacting step.

1 16. [elected] A method for purifying a crude compound containing a non-shielded purine
2 and/or pyrimidine moiety comprising the steps of:

3 forming a crude mixture comprising a target compound and contaminants;

4 contacting the crude mixture with an agent including an IMAC ligand capable of
5 binding to the target compound to form an IMAC ligand complex;

6 separating the complex from the contaminants; and

7 recovering the compound from the complex.

17. [elected] The method of claim 16, wherein the compound is an AIDS drugs selected from the group consisting of AZT or DDI, co-enzyme A, or mixtures thereof.

Claims 1-9 and 18-20 [provisionally withdrawn]

5 Claims 21 – 33 are added:

21. [Added] A method for separating compounds comprising the step of:

contacting a solution comprising compounds including a non-shielded purine or pyrimidine moiety and compounds including a shielded purine or pyrimidine moiety with a solid composition including immobilized metal atoms and/or ions capable of
10 binding compounds containing a non-shielded purine or pyrimidine moiety to form a supernatant liquid having a reduced amount of compounds including a non-shielded purine or pyrimidine moiety;

22. [Added] A method according to Claim 21 further comprising the steps of:

15 separating the supernatant liquid from the solid composition; or further comprising the steps of:

separating the supernatant liquid from the solid composition and

eluting the compounds including a non-shielded purine or pyrimidine moiety from the solid composition.

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23. [Added] A method for separating compounds comprising the step of:

contacting a solution comprising compounds including a non-shielded purine or pyrimidine moiety and compounds including a shielded purine or pyrimidine moiety with a solid composition including immobilized metal atoms and/or ions capable of
25 binding compounds containing a non-shielded purine or pyrimidine moiety to form a supernatant liquid having a reduced amount of compounds including a non-shielded purine or pyrimidine moiety.

wherein the compounds including a non-shielded purine or pyrimidine moiety comprise a nucleoside, a nucleotide, a single stranded nucleic acid oligomer, or a single stranded
30 nucleic acid polymer and the compounds including a shielded purine or pyrimidine moiety comprise double stranded nucleic acid oligomers or double stranded nucleic acid polymers; or wherein the supernatant liquid comprises compounds including a shielded purine or pyrimidine moiety having less than or equal to 5% by weight compounds including a non-shielded purine or pyrimidine moiety.

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24. [Added] A method of Claim 22 wherein the supernatant liquid comprises compounds including a shielded purine or pyrimidine moiety having less than or equal to 1% by weight compounds including a non-shielded purine or pyrimidine moiety;

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25. [Added] A method of Claim 22 wherein the supernatant liquid comprises compounds including a shielded purine or pyrimidine moiety having less than or equal to 0.01% by weight compounds including a non-shielded purine or pyrimidine moiety.

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26. [Added] A method for making multisubstrate columns comprising the step of running a small amount of IMAC ligand onto an activated column and then flooding the rest of the column with at least one additional ligand or stationary phase.

27. [Added] A method for separating compounds comprising the steps of:

50 passing a solution comprising a mixture of compounds including a non-shielded purine moiety, a non-shielded pyrimidine moiety or mixture thereof through a column including an IMAC ligand, where the ligand is capable of differentially binding the compounds; and

collecting purified samples of each compound;

55 28. . [Added] A method of Claim 10 further comprising the step of:
detecting each compound in an effluent from the column as a function of time from at
least one detectable property associated with each compound; and
determining the identity of each compound from the detected properties.

60 29. [Added] A method of Claim 26 wherein the mixture of compounds comprises
poly(A) tailed mRNA sequences and other mRNA sequences from eukaryotic cells,
where the poly(a) mRNA sequences elute after the other mRNA sequences; or wherein
the mixture for compounds comprises denatured nucleic acid sequences, where
sequences having A rich regions elute after sequences having T rich regions so that
65 complementary strands can be resolved.

30. [Added] A method of Claim 27 wherein the mixture for compounds comprises
denatured nucleic acid sequences, where sequences having C rich regions elute after
sequences having G rich regions so that complementary strands can be resolved; or
70 wherein the mixture of compounds comprises denatured nucleic acid sequences having
A-C, A-G, A-C-G, T-G, T-C and or T-G-C rich regions so that the sequences having the
A-C, A-G, and/or A-C-G rich regions elute after their complementary sequences having
T-G, T-C and or T-G-C rich regions resulting in a resolution of complementary
sequences.

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31 . [Added] A method for purifying food stuffs containing purine and/or pyrimidine
moieties comprising the steps of:

forming a crude food stuff comprising cellular constituents including digestable
80 proteins and nucleic acid contaminants including a non-shielded purine moiety, a non-
shielded pyrimidine moiety or mixture thereof;

contacting the food stuff with substrate comprising an IMAC ligand, where the substrate binds the nucleic acid contaminants; and

removing the substrate comprising the IMAC ligand having bound thereto the
85 nucleic acid contaminants to form a purified food stuff; further comprising the step of
treating the crude food stuff with a DNase, endo or exo nuclease or other nucleic
acid digestion enzyme or agent prior to the contacting step.

90 32. [Added] A method for purifying a crude compound containing a non-shielded
purine and/or pyrimidine moiety comprising the steps of:

forming a crude mixture comprising a target compound and contaminants;

contacting the crude mixture with an agent including an IMAC ligand capable of
binding to the target compound to form an IMAC ligand complex;

95 separating the complex from the contaminants; and

recovering the compound from the complex.

33. [Added] A method of Claim 32 wherein the compound is an AIDs drug selected
100 from the group consisting of AZT or DDI, co-enzyme A, or mixtures thereof.